

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent

In re patent application of: WITTORFF

Serial No.: 10/684,745

Examiner: CHO, HONG SOL

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Art Unit: 2616

For: IMPLEMENTATION OF CONSTRAINTS... Docket No.: 03-640

AMENDMENT AFTER NON-FINAL REJECTION

ASSISTANT COMMISSIONER OF PATENTS

Washington, DC 20231

SIR:

Responsive to the Office Action mailed on May 2, 2007, please amend the above-identified application as follows. In the following response, each numbered point of the Office Action is addressed in sequence and numbered and labelled in the same manner as in the Office Action. This response replaces the document submitted as part of EFS ID 2151505, which was submitted unsigned and without identifying the application.

Drawings

1. Corrected drawing sheets as requested have been submitted as part of EFS ID 2151505.

Claim Rejections – 35 USC § 112, Second paragraph

2. (Information noted and understood, no response required.)
3. The paragraph of the claim setting out the first step of the method defines three individual elements being:
 - a) “the lower level peer group corresponding to the logical group node containing the meta-cut”, thereafter referred to as the *said peer group*

- b) “a peer group connected to *said peer group* by one of the two said arcs” and
- c) “a peer group connected to *said peer group* by the other of two said arcs”.

While there are three elements defined in this paragraph, the latter two of these may correspond to either the same peer group or different peer groups (as explained further in the examples given below).

Claim 4 is hence correct and clear as written. The claim does not specify whether there are two or three peer groups, which is the question posed in the Office Action, and indeed there could be two, or three, depending on the scenario. In the wording of the claim, the said peer group is the lower level peer group corresponding to the Logical Group Node (LGN) containing the meta-cut to be implemented, and this meta-cut is between the two said arcs. The two possible scenarios are both represented in Figure 3b. One scenario is represented by the meta-cut shown in LGN 3 (corresponding to peer group A1), where the meta-cut is between two arcs, one of the arcs connecting LGN 3 (peer group A1) to LGN 1 (peer group A2), and the other arc connecting LGN 3 (peer group A1) to LGN 2 (peer group A4). In this scenario there are three peer groups involved. The other scenario is represented by the meta-cut shown in LGN 2 (corresponding to peer group A4), where the meta-cut is between two arcs, both of which connect LGN2 (peer group A4) to LGN 1 (peer group A2). In this scenario there are only two peer groups involved.

While we do not believe it is necessary to clarify the term *said peer group*, we would be amenable to amending “a peer group connected to said peer group” in b) and c) above to “a peer group connected to said lower level peer group” to avoid any doubt, if the examiner considers this wording preferable.

Claim Rejections – 35 USC § 102

4. (Information noted and understood, no response required.)

5. Claims 3 and 5 are not anticipated by Hummel (US 5831982), and nor are any of the other claims. The only similarity between Hummel and the present invention is that they both have something to do with routing constraints in a hierarchical network (both draw upon the well-known ATM-PNNI protocol as an example framework).

However Hummel begins by imposing certain arbitrary “communication conditions”, by which he means the blocking of certain links (pa5 and pa6), without stating categorically how or why such “communication conditions” would be chosen. Hummel implies that such links might be blocked *owing to the instantaneous network usage factor*, column 3, line 37. Then, given the topology including these arbitrarily blocked links, Hummel describes a method of determining *a route which makes bypasses via other subnetworks* (peer groups), column 3, lines 33-34. Hummel defines a “bypass” as a part of the route that *leaves ... one subnetwork* (peer group) ... *and returns to said subnetwork* (peer group) *in the further course of the route*, column 3, lines 13-15. Hummel implies that this method extends the ATM-PNNI protocol, the latter which *does not ... provide the possibility of also including in the route search advantageous bypasses [as described by Hummel]* column 2, lines 41-48.

On the other hand, the present invention as defined in claim 3 relates to “*a method of implementing constraints in a hierarchical network*”. As per the title of the invention, the implementation of constraints is for the purpose of ensuring deadlock avoidance. As mentioned above, while Hummel refers to the blocking of certain links, the choice of these links is based on some undefined conditions. From this starting point, Hummel then proceeds to define his invention, which relates to determining routes in the network (which is not the purpose of the present invention). While Hummel may show an example in which links are blocked and, in that particular example, the blocking of such links may even result in a network that could avoid deadlocks, the blocks are not described as to be for this purpose and it does not

provide a generalized method for achieving such a result. That is, it does not disclose steps of a method that can be applied to networks of different configurations in order to determine the location of routing constraints such that deadlock avoidance is the result.

Further, we submit that the type of ‘blocks’ provided in Hummel are not of the same type disclosed and claimed in the present invention. In Hummel, the blocks mentioned simply prevent traffic passing from the node at one end of the link to the node at the other end of the link. In the present invention, the operation of the “cuts” or “meta-cuts” is quite different. The cuts do not prevent traffic flow on any particular link as in Hummel. The cuts are placed in a node between pairs of links and prevent traffic entering the node on one of the links from leaving on the other. This arrangement, which is not present in Hummel, is clearly reflected in the claims.

In light of the above we submit that claim 3 is not disclosed nor suggested by Hummel. In our view claim 5 is should also therefore be considered as allowable as it is dependent on claim 3.

Allowable Subject Matter

6. Since the objections to Claim 4 have been avoided (see points 3 and 5 above), Claim 4 should be allowed, either as written, or with the non-essential clarification gained with the amendment of “said peer group” to “said lower level peer group” (see point 3 above).
7. Since the objections to Claim 6 have been avoided (see point 5 above), Claim 6 should be allowed as written.
8. It is noted that Claims 1 and 2 are already agreed to be allowable as written.

Allowance of the application in its present form is respectfully solicited.

Respectfully submitted,

/VWittorff/

By: Vaughan William Wittorff

Date: September 4, 2007